



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p><b>(21) International Application Number:</b> PCT/GB97/02388</p> <p><b>(22) International Filing Date:</b> 5 September 1997 (05.09.97)</p> <p><b>(30) Priority Data:</b>          9618897.4                      10 September 1996 (10.09.96)    GB</p> <p><b>(71) Applicant (for all designated States except US):</b> BIO-RAD MICROMEASUREMENTS LIMITED [GB/GB]; Bio-Rad House, Maylands Avenue, Hemel Hempstead, Hertfordshire HP2 7TD (GB).</p> <p><b>(72) Inventors; and</b>  <b>(75) Inventors/Applicants (for US only):</b> MAYES, Ian, Christopher [GB/GB]; Bio-Rad House, Maylands Avenue, Hemel Hempstead, Hertfordshire HP2 7TD (GB). HIGGS, Victor [GB/GB]; Bio-Rad House, Maylands Avenue, Hemel Hempstead, Hertfordshire HP2 7TD (GB).</p> <p><b>(74) Agent:</b> WILLIAM JONES (YORK); The Crescent, 54 Blossom Street, York YO2 2AP (GB).</p>		<p><b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b>  <i>With international search report.</i></p>
<b>(54) Title:</b> <u>APPARATUS AND METHOD FOR DETECTING MICRO DEFECTS IN SEMI-CONDUCTORS</u>		
<p><b>(57) Abstract</b></p> <p>The invention relates to a method and apparatus for detecting defects in a semiconductor or silicon structure at room temperature, and in an efficient time, using photoluminescence. The invention employs the use of a high intensity beam of light preferably having a spot size between 0,1 mm-0,5 microns and a peak or average power density of <math>10^4</math>-<math>10^9</math> w/cm<sup>2</sup> with a view to generating a high concentration of charge carriers, which charge characters detect defects in a semiconductor by interacting with same. These defects are visible by producing a photoluminescence image of the semiconductor. Several wavelengths may be selected to identify defects at a selective depth as well as confocal optics may be used.</p> <div> </div>		

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